ATLEE (W. L.)

With the compliments of the Author.

THE TREATMENT

OF

FIBROID TUMORS OF THE UTERUS.

BY

WASHINGTON L. ATLEE, M.D.,

OF PHILADELPHIA.

EXTRACTED FROM THE TRANSACTIONS OF THE

INTERNATIONAL MEDICAL CONGRESS,

PHILADELPHIA, SEPTEMBER, 1876.

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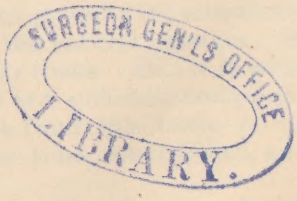

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THE TREATMENT OF FIBROID TUMORS OF THE UTERUS.

In opening the discussion on The Treatment of Fibroid Tumors of the Uterus, a question that has for many years engaged my attention, it will be impossible to present the subject properly in the short space of time allotted to me; and I must, therefore, ask your indulgence if, in adhering closely to the text and compressing my material, I should fail in satisfactorily elucidating the several points in this paper.

I beg, also, to premise that, in bringing this subject before the Section on Obstetrics, I shall not go into the detail of every method of treatment. This I think would be out of place before an assembly of such enlightened men, who are already familiar with its written history. I shall merely refer to my own experience. Every gentleman, who will engage in this discussion, has an experience of his own, and if each one will bring his personal contributions, able architects of our profession will rear a structure out of these materials which no individual could erect from his own observations, and which will stand as a lasting memorial of this day's work. In this way we will be likely to arrive at the best practical results for the benefit of Science, Art, and Humanity.

My methods of treatment have been surgical and medicinal. In the use of medicine I have principally confined myself to iodine, ergot, and muriate of ammonia. Many years ago I lost faith in iodine, and now seldom use it, and only as a local application. As early as 1845, I introduced the use of ergot in the treatment of uterine fibroids, and have ever since employed it. In proof of this I may refer to my essay on Fibrous Tumors of the Uterus, published in the Transactions of the American Medical Association for the year 1853. Ergot, no doubt, acts in two ways in influencing the nutrition of fibroids of the uterus: (1) on the muscular tissue of that organ, and (2) on the capillary circulation of the tumor itself by contracting its smaller vessels. Notwithstanding this action of the medicine, I have never been so fortunate as to see a fibroid quietly disappear under its sole influence, although in many cases the size has been diminished, while in others no effect has been produced. The reason of its variability in action may be explained in the course of this paper. Recently, Hildebrandt has introduced the hypodermic use of ergot, and with results, in his hands, quite extraordinary. I cannot, however, conceive how this agent can accomplish more by its subcutaneous employment than by its administration by the natural passages. It certainly acts more promptly through the cellular tissue. But it is questionable whether this increased speed of action is a sufficient compensation for certain inconveniences to the patient from this mode of its application, as well as for the greater tax on the time, convenience, and patience of the medical attendant.

In the consideration of the treatment of uterine fibroids, it must also be kept in mind that spontaneous cures may result in consequence of

fatty degeneration; that diminution in the size of the tumors is often observed in advancing age, through senile atrophy of the muscular fibres; that fibrous induration sometimes occurs, the muscular tissue becoming scarcer as the connective tissue hardens, and that this induration is followed by calcification and an arrest of growth.

With these preliminary remarks, I will proceed to discuss the subject of treatment more definitely. In doing so understandingly, it will be necessary to keep in view the relative position of the tumor with the uterus. Hence I will make the somewhat arbitrary division into the following heads:—

I. Tumors usually accompanied with hemorrrhage, embracing (1) fibroids occupying the vaginal canal; (2) fibroids within the cavity of the uterus; (3) interstitial, submucous fibroids; (4) interstitial fibroids proper; (5) recurrent fibroids.

II. Tumors usually not accompanied with hemorrhage, including (1) interstitial, subperitoneal fibroids; (2) sessile, peritoneal fibroids; (3) pedunculated, peritoneal fibroids; (4) interstitial, cervical fibroids; (5) myomatous degeneration of the uterus; (6) fibro-cysts of the uterus.

I. Tumors usually accompanied with Hemorrhage.

(1) *Fibroids expelled from the Cavity of the Uterus, or occupying the Vaginal Canal.*—The treatment of these tumors will vary according to their size. When small, with a slender pedicle, the tumor may be grasped as high as possible on its neck by means of Luer's polypus forceps, or a similar instrument, and twisted off, or, in other words, removed by torsion.

When larger, with a pedicle not thicker than a finger, it may be seized and brought down with some force so as to stretch the pedicle, which may then be severed at as high a point as possible with Cooper's hernia bistoury, or a probe-pointed bistoury properly wrapped and protected.

When quite large, distending the vagina or filling up the pelvis like the head of a child, a small obstetric forceps may be applied to it, and then placing the patient under the influence of an anæsthetic, with the assistance of supra-pubic pressure, the tumor may be gradually brought through the os externum. Having accomplished this, one of several plans may be adopted for the purpose of detaching it: (*a*) By means of the bistoury the proper coat of the tumor may be severed all around, about an inch or so beyond the insertion of the pedicle, and then the upper end of the tumor enucleated from its peduncular attachment; (*b*) the substance of the pedicle may be directly severed by the knife; (*c*) the pedicle may be divided by the *écraseur*. I have used all these methods, and it is best to be prepared for either operation, as the surgeon must be governed by the circumstances of each case. When it can be accomplished, I prefer the first method, or that by enucleation of the pedunculated end of the tumor.

Immediately after the removal of these large tumors we should use a tampon, charged with persulphate of iron or other efficient hæmostatic and antiseptic, adapting it well against the amputated stump, and allowing it to remain from twenty-four to forty-eight hours. The raw and, usually, inflamed surfaces should afterwards be treated through the

speculum by suitable applications until they are brought into a normal condition.

It may be noticed that I have not referred to the ligature as one of the methods. I have long since abandoned this plan, preferring immediate ablation of the tumor.

(2) *Fibroids entirely within the Cavity of the Uterus.*—The treatment of fibroids inclosed within the cavity of the uterus must depend somewhat on their size and locality. When large and of long duration, having distended the body of the uterus and dilated the cervix as does the head of a child in the last months of gestation, an examination by the finger will discover a mere uterine ring, through which by firm pressure, particularly when counteracted by supra-pubic support, a tumor within may be detected. This no doubt is the condition precedent to the first form of fibroid which we have considered, and the lapse of time in all probability, if the patient should hold out, would accomplish the same state of things. It is, however, not always safe to wait, but safer to facilitate measures by imitating the processes of nature. To make the tumor more accessible, the os uteri should be dilated by the usual means, and at the same time ergot administered to excite and maintain the contraction of the expulsive fibres of the organ, and in this way also aid in opening the uterus. Or, instead of using dilators to open the os uteri, the action of ergot may first be established, and afterwards the tense edges of the os may be nicked with a bistoury, thus successively dividing the circular fibres, and accomplishing the object in much less time. As soon as the mouth of the womb is sufficiently expanded, a small obstetric forceps may be introduced and applied to the tumor in the same way as it is to the head of a child. Traction should now be made on the tumor under the influence of an anæsthetic, and if the circular fibres, as will probably be the case, should resist its escape, the bistoury must be employed until all resistance is overcome, and the tumor is brought into the cavity of the vagina. It is now in the position described under the first head of our subject, and may be managed accordingly.

There is, however, a very important difference between a tumor passing from the uterus into the vagina spontaneously and one brought there by violence, and that difference involves a very grave practical point. This will be at once apparent when it is stated that in the former case the tumor alone occupies the vagina, and that in the latter it is very apt to be accompanied by an inverted uterus. This is particularly liable to occur when the pedicle is attached to the fundus. Usually too, in vaginal fibroids, we find a moulded and elongated pedicle which is readily and safely managed, but in the tumors under consideration the pedicle is usually sessile, and affords but small space for any surgical appliance. Hence, the inverted fundus uteri is in great danger of injury and mutilation, and unusual care is required in amputating the tumor. I believe the safest mode is to enucleate the upper portion of the tumor from its proper coat, and thus free it from its uterine connections. Of course, after this is done, the inverted uterus should be at once replaced after proper styptics have been applied to the raw surface, and the case treated upon general principles.

These fibroids, however, are not always as simple and as easily managed as has been just described. From some cause or other the tumor may have formed adhesions to the surface of the uterus, independent of its original, peduncular attachment. These adhesions may be so situated as to interfere materially with the dilatation of the os uteri, or with the

introduction and application of the forceps. It is necessary, under these circumstances, as soon as they are recognized by the finger, to sever them with the bistoury until the surface of the tumor is free. If, in consequence of such adhesions, or of a lateral origin of the pedicle, the ordinary forceps cannot be applied, Museux's forceps, or appropriate hooks, may be substituted to seize and bring down the tumor after the os uteri is sufficiently dilated.

Besides the fibroids referred to, there are other tumors in the cavity of the uterus which are entirely concealed, and, either from their diminutive size or a very adipose abdomen, cannot be detected. The cervix uteri may be intact, and there may be no bulging of the uterine wall recognizable by the finger in the vagina. Yet the symptoms may be so diagnostic of their presence that we are bound to be governed by them alone. In such cases we must dilate the cervical canal by sea-tangle, sponge tents, etc., until we are able to pass the index-finger and explore the interior of the uterus, and get access to the tumor. The dilatation must now be carried further, so as to admit, in addition to the finger, the necessary instruments for the removal of the growth. These are usually a strong, slender forceps, or hook, and a long-handled, probe-pointed bistoury, or a probe-pointed, semicircular knife. A small wire *écraseur*, passed above the forceps, will answer the same purpose. If the tumor have a small pedicle, it may be removed by torsion.

(3) *Interstitial Submucous Fibroids.*—These are tumors which, originating in the wall of the uterus, develop mainly towards the mucous surface. Like the two preceding forms, they more urgently demand the surgeon's attention in consequence of inducing uterine hemorrhage. When the cervix is not implicated in this class of tumors, and the body of the uterus alone is involved, it is best not to be too precipitate in resorting to surgical means for relief. As long as hemorrhage can be controlled, and blood saved to the patient, it is best to depend upon the judicious employment of ergot and other remedies, rather than to resort to a hazardous use of the knife. A tumor thus situated, with muscular walls on one side of it and a mere mucous covering on the other, will be in a favorable condition for ergot to gradually expel it from its muscular bed, and force it into the uterine cavity, and, in proportion as this is accomplished, we secure the aid of all the longitudinal fibres of the uterine walls in propelling the growth against the circular fibres of the cervix, and in causing a gradual opening of the os uteri—thus finally reducing this form of tumor to the second variety before considered.

If, however, exhausting hemorrhages cannot be controlled, and fatal consequences threaten, other and more decided measures must be adopted. The os and cervix should be well dilated, so as to get free access to the interior of the uterus, and to be able to command the surface of the tumor. As soon as this is done, efficient doses of ergot must be administered, and, when its action is established, a long, probe-pointed bistoury, guided by the index finger of the left hand, should be passed up flatwise into the uterus, as in using a sound, and carried over the face of the tumor until it reaches its upper border. An assistant should now grasp the lower part of the abdomen and steady the uterus. The bistoury is then turned with its edge against the tumor, and boldly pressed into it and drawn downwards through its dense tissue, so as to slit open both its mucous covering and its proper coat, burying the knife well in the fibrous mass, and carrying it downwards until it makes its exit at the lower border of the tumor. As the knife passes through the dense tissue,

a decided grating is perceptible. It is a remarkable and interesting fact that, if hemorrhage have existed before this incision, it will cease after it has been made, and it will sometimes be found that when nothing else will arrest hemorrhage, a free use of the knife will accomplish it. Immediately after the section, an attempt should be made to enucleate the tumor from its bed, which can often be accomplished if the tumor be not too massive. Should it not be removed at once, it is apt soon to become disorganized and dead, throwing off a very offensive, dirty, watery discharge, and endangering septicæmia. Ergot must be continued, to maintain the contraction of the uterine tissue, antiseptics administered by mouth, lungs, and vagina, and the patient sustained until the tumor is removed by the surgeon, or is discharged in a softened mass resembling wet tow. The danger to be apprehended after this operation is blood-poisoning from dead matter. This is very much diminished when the tumor is removed by one operation, but, even then, the extent of raw surface remaining after the tumor is taken away, sometimes causes toxæmic symptoms.

(4) *Interstitial Fibroids Proper.*—These are tumors which originate deeply in the substance of the uterine wall, and during their growth and development are surrounded by a pretty uniform coat of uterine or muscular tissue, neither impinging on the mucous lining on the one side nor on the peritoneal covering of the organ on the other. As a general rule, the demand for active treatment in these cases is not as great as in the submucous varieties. These intra-mural tumors, however, are the very ones most amenable to the mode of treatment that has recently claimed the attention of the profession, viz., the hypodermic use of ergot. I can understand how the tonic contraction induced by ergot can impede nutrition in a tumor so located, but I cannot conceive how absorption could be promoted under a similar amount of compression obstructing the absorbent vessels. In the treatment of interstitial fibroids I think it best to use ergot periodically and not constantly; employing it in anticipation of and during the menstrual periods, and associating with it the continuous use of an alterative sorbefacient, such as muriate of ammonia. If ergot acts mechanically in destroying the life of a tumor, then, when that is accomplished, the stress or pressure should be removed, so that this dead matter may be absorbed. As long as this dead material is hermetically encased in living tissue, unaffected by atmospheric influences, it is not likely to become offensive or toxic, and may be carried off by the absorbents like other molecules of dead matter in the regular processes of repair, without infecting the general system. As there is a tendency for fibroids to increase in size before each menstrual period, in consequence of the greater determination of blood to the organs of generation, so there is a diminution in their size after menstruation subsides. Hence ergot is calculated to act beneficially, when given in time, in arresting this supply of blood to the tumor; and yet we must not always attribute the diminution in size, which usually follows menstruation, to the influence of ergot, as it is a natural physiological sequence.

These interstitial fibroids often assume a great size, and in doing so stretch the cavity of the uterus to an unusual length, increase the vascularity of the organ and the size of the vessels pervading the corresponding mucous covering, and, during the menstrual period, these unsupported vessels are rendered turgid and congested, and, giving way, produce copious and dangerous hemorrhages. When this is the case, and danger cannot be averted by medication, surgical means are demanded. A bold, free inci-

sion through the muco-muscular envelope of the tumor, and through its proper coat, burying the knife into the fibroid substance, will be attended by an arrest of the bleeding. This may be followed by an enucleation of the tumor—the several steps of the subsequent operation being the same as detailed under the head of Interstitial Submucous Fibroids.

Sometimes the interstitial fibroid, even when very small, may produce the most violent symptoms, both local and reflex, leading even to death; and may be so situated that, under certain circumstances, its existence may not be suspected, and that, even if correctly diagnosticated, it could not be removed by any ordinary operation. This is particularly the case when the tumor originates in the lateral part of the fundus uteri and becomes intra-ligamentous. Such cases, fortunately, are extremely rare, and I will endeavor to illustrate them by the detail of one which recently proved fatal:—

Mrs. D. G. S., aged 34 years, was brought from the interior of the State to Philadelphia, and placed under my care. She was small in stature, but excessively corpulent, particularly in the abdominal wall. For a long time she had suffered the greatest agony and distress, and had had frequent and most violent convulsions. All the symptoms were distinctly traceable to the uterus. There was decided endo-metritis, and the slightest touch of the sound would cause terrific spasms. There was also extreme tenderness confined to a small spot in the hypogastric region, on the right of the linea alba, so that she could not tolerate the most gentle pressure. The treatment during the winter of 1874–75 relieved the endo-metritis and several of the reflex symptoms, and, although she had not fully convalesced, she went home with the expectation of gradually regaining her health. But she again became worse, and her husband, an intelligent physician, conducted the treatment, but without controlling the symptoms. I visited her several times during the winter of 1875–76, and I never saw a greater sufferer. The spot in the hypogastrium was the point of trouble. She had not been able to lie down for months, and the right thigh was kept flexed all the time. Her suffering was so constant and intense that both she and her husband begged me to open her and remove the womb. She required the constant use of the most powerful anodynes to afford the least comfort. Finally symptoms of cerebral congestion supervened, and in a few days after, on the twenty-third of March last, death came to her relief. In exposing the abdominal cavity after death, about four inches in thickness of adipose tissue had to be penetrated. The uterus was enlarged and highly congested. Its cavity was three and a half inches long. The lining membrane was normal. In the right wall of the fundus was an interstitial fibroid, not over two inches in diameter, surrounded by a dense wall of uterine tissue, and so closely adherent to its capsule that it could not be shelled out or enucleated. The capsule had evidently been in a state of inflammation, and this was thought to be the cause of the intense and fatal suffering. Both openings of the Fallopian tubes were obliterated.

In reference to this interesting case I wish to state that I had appointed the very day on which I witnessed the post-mortem examination to visit the patient to decide upon the feasibility of extirpating the uterus. In consequence of the extreme amount of abdominal fat, as shown by the examination, this would have been very difficult, if not impracticable. For the same reason it was impossible to make a correct diagnosis of the case, and the fibroid discovered after death was not at all suspected to exist before. Of course the case might possibly have been made out by the barbarous practice of exploring with the hand through the rectum. If such an extreme case were again to present itself to me,

particularly in a thin patient, I should think it my duty to remove the diseased organ.

(5) *Recurrent Fibroids.*—The recurrent fibroid is polypoidal in character, and is supposed to be reproduced, after its removal, from the same pedicle. These cases are very troublesome, because, after one tumor is removed, there may be repeated recurrences of others, resembling in this respect, and in this only, the several forms of malignant disease. The operation for their removal is the same as for that of the ordinary uterine polypus, but, as this is a much more grave trouble, I wish to submit to the Section a proposition embracing more extensive surgical interference. This proposition is based upon the treatment of two cases of very great interest, which I beg permission to relate.

In the first case I removed eleven successive tumors, after which the patient recovered and had no return.

On December 27, 1860, I visited Mrs. T. W. S., aged 31 years. Menstruation for the first four years was small in quantity and free from pain, but afterwards was accompanied with extreme agony during the first day. She married at the age of 24 years, in one year after gave birth to a child, and had a miscarriage afterwards. The menses were regular, having only missed the last period. In April, 1858, she first discovered something wrong in not being able to pass water. A large quantity was drawn away by the catheter, which operation had to be repeated. Several physicians saw her, and diagnosticated malposition of the womb, and very violent efforts were made to restore it to its normal position, but without effect. June, 1860, she had a sudden attack of severe pain, which so entirely disabled her that she could not walk for several weeks, suffering much of the time with the most dreadful bearing-down pains. After a period of intermission the expulsive pains again returned with extreme violence, and, on November 28, 1860, while using the catheter, she felt a tumor in the vagina which she supposed to be the womb. The pain now diminished, but the size of the tumor gradually increased, and it finally protruded through the os externum. During the above period she had copious discharges from the vagina of bloody clots and a greenish, slimy, and offensive fluid, changing usually about twenty-five napkins in a day.

When I saw the patient she was perfectly blanched and anæmic, with a small thread-like pulse, and evidently in a state of toxicohæmia. A tumor, as large as a small adult head, protruded from the vagina, and was lying between the thighs. It was in a gangrenous condition, and gave off a most offensive odor. The index finger, passed into the vagina in front, came against the anterior lip of the os uteri about two inches up. It was stretched across the front face of the tumor, which was continued into the uterus as far as the finger could reach. The sound struck the fundus uteri one inch above the anterior lip. The vagina behind the tumor was also explored. A *cul-de-sac* was reached at the distance of one and a half or two inches, formed apparently by the inverted vagina coalescing with the tumor. The growth had clearly been developed in the posterior wall, and had been extruded by the uterine efforts from the cavity of the organ. The circulation was still maintained in the posterior portion of the mass. The pedicle was about two inches thick. With the assistance of Drs. Drysdale and Burpee, I removed the mass by means of the *écraseur*. Although much decomposed, its weight was one and a quarter pounds. For several weeks the patient continued to be very ill with septicæmic fever, but finally fully recovered.

April 17, 1862, the patient consulted me again, stating that she had remained well until three months before, when she had had a copious puruloid discharge, and that one week before seeing me another tumor had begun to protrude. On examination, I found that the relative positions of the tumor and uterus were now different. The former, instead of being behind the os tincæ, was anterior to it, and the expanded posterior lip could be distinguished in the hollow of the

sacrum. This second tumor increased to a considerable size, and was removed in the same way. At the same time a hard tumor was felt occupying the hypogastric region. A few weeks after the removal of the second tumor it was followed by a third, which was also taken away. A mass still occupied the hypogastric region.

The following December she was taken with excessive hemorrhage, requiring the use of the tampon. Subsequently quite a large tumor was expelled from the vagina, and at the same time the supra-pubic tumor disappeared. This, the fourth tumor, was removed by the *écraseur* on the 9th of January, 1863, and the operation was followed by a rapid recovery. June 1, 1863, another large tumor, the fifth, was removed in the same way. January 21, 1864, the sixth tumor, less in size, was removed. I could plainly trace this one into the cavity of the uterus, and the anterior lip of the os stretched over it, the sound entering anterior to the mass two and a half inches. At the same time I recognized a hard tumor in the right inguinal region. August 24, the same year, the seventh tumor was removed. The eighth, ninth, and tenth were subsequently removed up to the 20th of May, 1866. The eleventh tumor was taken away on the 18th of August, 1867, with the assistance of Dr. J. Nicolaysen, of Christiania, Norway, now Professor of Surgery in the University of Norway. After this no tumor could be detected anywhere.

After the eleventh operation there was no return, and the patient regained her health, at least for two or three years, after which I lost sight of her.

In reviewing the above case—its extraordinary features, its long duration, its imminent perils, and its almost endless recurrence—the question has often presented itself to me: Would not extirpation of the uterus at an early period have been not only justifiable but preferable?

A question also of great interest—the pathology of the so-called Recurrent Fibroids—might be discussed with profit, but this is not compatible with our present subject. Both questions will be in a measure involved in the detail of another case, which I think would have exhibited the same features as that above narrated, but which was terminated quickly and happily by a different mode of treatment:—

On May 15, 1874, Mrs. C. T. was brought from the interior of Pennsylvania for treatment. She was 30 years of age, had first menstruated at the age of 14 years, and had continued to be regular until her marriage in 1870. Two years before marriage she began to suffer from a burning sensation in the pelvic region, and from bearing-down pains, which gradually grew worse. Soon after marriage menstruation became more copious, and, eighteen months after, she was seized with great pain, accompanied with excessive flooding. Subsequently she was confined almost constantly to bed by copious hemorrhage, intense suffering, and constant nausea and vomiting. She had never conceived. Prostration, emaciation, and anæmia were very strongly marked.

The uterus was enlarged to the size of a four-months' pregnancy, the cervix fully expanded, and the os, round and ring-like, merely admitted the point of the index finger. A hard, smooth tumor could be felt within. I immediately put her on the use of iron and ergot, but, notwithstanding, she had an overwhelming attack of flooding and pain. By the 22d of June the condition of the patient and of the os uteri was such as to warrant me to proceed with an operation. Assisted by my son, Dr. W. Lemuel Atlee, I introduced a forceps into the cavity of the uterus, and, grasping the tumor, made traction while the patient was under the influence of an anæsthetic. As the os was not sufficiently open to allow the tumor to escape, it was nicked by the bistoury as it tightened over the descending mass, which finally was delivered into the vagina with a sudden slip, and afterwards through the os externum. The *écraseur* was now applied, but, proving to be faulty, was removed, and the pedicle was severed by the bistoury. While preparing for this part of the

operation, I was struck with what appeared to be an unusual elongation of the pedicle, which was dotted over with several molluscum-like bodies. Apprehending that this might be the uterus itself inverted, I was careful to make the section close to the tumor. Immediately afterwards I tamponed the vagina with strips of muslin wet with Monsel's solution of iron.

The operation was followed by intense pain, and in the course of two or three hours by hemorrhage, which was controlled by removing the first tampon and substituting small sponges. There were also incessant sickness and vomiting, which, the patient said, always followed the loss of blood or the use of anæsthetics. These symptoms were subdued by opiates in the course of twenty-four hours. The pulse increased in frequency, and the case looked rather alarming. Next day the sponges were removed, an examination was made, and a rough, irregular, tumor-like mass still occupied the vagina. I could not divest myself of the apprehension of its being an inverted uterus. The parts were so very tender that a satisfactory examination could not be made. This soreness continued for eight or ten days.

The regular menstrual period came on the first week in July, accompanied with very little pain and a moderate discharge. On the 13th I repeated the examination, and found the same state of things. The os grasped the tumor, and a sound passed up entered the uterine cavity the normal distance of two and a half inches. From this examination I inferred that there was no inversion, and that there still remained a portion of the original tumor. Pressure over the pubes did not enlighten me. Perhaps a finger in the rectum would have disclosed the true state of the case. I seized the body with a strong double tenaculum, brought it partially through the os externum, applied the *écraseur*, and on working the instrument found the tissue unusually resisting, requiring much force and time in getting through it, and indeed having to finish the operation with the knife. On examining the mass, after its removal, I was surprised to find it to be the body of the uterus.

[The specimen was then exhibited. The mucous surface was dotted over with several small tumors in different stages of development.]

Great pain and sickness of the stomach succeeded the operation as before, but did not last so long. Much less bleeding accompanied the amputation, and none followed it. The patient had a rapid and excellent recovery, grew fat and hearty, and, with the exception of slight coccyodynia, has been in the continued enjoyment of perfect health. Menstruation has not occurred since. The speculum reveals a perfect os tincæ, and the sound enters only one inch.

Although the treatment of the above case was ultimately conducted on an error of diagnosis, does it not teach a valuable practical lesson? If the history detailed to you this day explains and illustrates the pathology of the so-called recurrent fibroid of the uterus, and if each abnormal body on the surface of the womb is liable to be successively developed into a life-endangering tumor, will not the amputation of the body or the entire removal of such a diseased organ be the best mode of treatment, keeping in view the comfort and life of the patient?

II. Tumors usually not accompanied with Hemorrhage.

(1) *Interstitial Subperitoneal Fibroids.*—These are tumors having the same relation to the serous coat of the uterus as the interstitial submucous fibroids have to the mucous coat. They are imbedded in uterine tissue except where they present towards the abdominal cavity, and there they are covered only by peritoneum. Their locality renders them much less serious in their consequences to the patient, and does not call so

imperatively on the surgeon for interference. Still, circumstances might arise in which relief would be demanded. Treatment in these cases will accomplish a great deal, either with or without reference to an ultimate surgical operation. I have just hinted at the action of ergot in the submucous fibroids. It is the same, in an opposite direction, in the subperitoneal tumor. The tendency of any foreign body, when acted upon by the contractile efforts of uterine tissue, will be towards the point of least resistance. Hence ergot, acting forcibly on the muscular substance of the uterus, in which the fibroid is deposited as in a closely-fitting nest covered merely by a delicate serous membrane, must, as a necessary result, gradually diminish the bed of the tumor, and as gradually cause the mass to encroach upon the abdominal cavity. I have no doubt that nature herself sometimes converts this kind of tumor into a sessile or even pedunculated fibroid. And hence, by following her teachings, by means of ergot we are able greatly to aid her in accomplishing such results. Supposing, however, that this result has been reached, the tumor has not been destroyed nor diminished, but only changed in its locality, for I very much doubt whether ergot has influenced its growth in this situation. Still, our patient has been benefited by relieving a very sensitive and irritable organ of a troublesome tenant, and by placing the tumor in a position more accessible to the resources of surgery if the case should ever demand it.

In interstitial subperitoneal fibroids, it would be extremely hazardous to invade them by the knife from the interior of the uterus, and in this way attempt their enucleation or even disorganization and devitalization, as their thin serous coating would not be a sufficient barrier to protect the abdominal cavity from being entered, which would necessarily cause fatal results. It would be much safer, after the administration of ergot, to open the cavity of the abdomen, expose the surface of the tumor, divide its peritoneal coat with the knife, and enucleate the mass from its muscular bed. Should bleeding occur, the vessels could readily be secured as they are in ovariotomy, and to guard against oozing and accumulations in the abdominal cavity a siphon-drain could be carefully placed and brought out of the lower angle of the wound. At the same time, if deemed necessary, a communication between the bed of the tumor and the cavity of the uterus could be made, and thence through the cervical canal with the vagina, and a siphon introduced so as to assist in carrying off fluids also in that direction. These precautions would go very far in preventing septicæmia and fatal inflammation.

(2) *Sessile Peritoneal Fibroids.*—These are tumors which present bodily into the abdominal cavity, but are closely seated on the exterior surface of the uterus, and have a broad base. They do not sink deeply into the uterine tissue itself, and do not elongate the uterine cavity. They may be removed in the same way as the subperitoneal variety, but the same precautions need not be exercised with regard to the uterine bed which receives the tumor. Indeed, in both varieties, a peculiarly formed tube of silver, glass, or hard rubber, around which the detached coats of the tumor could be fastened or ligated, might be secured with one end in the bed of the tumor, while the other could be carried out of the lower end of the abdominal wound, thus acting as a siphon in drawing off the fluids, or as a conductor for the introduction of antiseptic washes from without. By the time the ligatures should have become loosened, the drainage tube could be removed, and a fistulous track would remain to fill up and heal by granulation and cicatrization.

In cases of ovariotomy, when complicated with small sessile fibroids, I have not hesitated to enucleate them before closing the incision, being careful, if there were any oozing, to carry a tent from the raw surface to the lower angle of the wound.

(3) *Pedunculated Peritoneal Fibroids.*—These are fibroids having a distinct pedicle, either membranous or myomatous, attached to the exterior surface of the uterus, and contained within the cavity of the abdomen. These tumors, being beyond the limits of uterine action, are not usually influenced by the use of ergot, but do sometimes yield to the sorbefacient action of muriate of ammonia uninterruptedly maintained for a long time. If they fail to yield to medical treatment, and induce such severe symptoms as to destroy personal comfort or jeopard life, they may be removed, as are ovarian tumors, by abdominal section, and the pedicle secured by the clamp or ligature. The operation need not be described. I may, however, remark that, in proportion to the size of the tumor, the incision through the walls of the abdomen must necessarily be larger than that required by ovariotomy, and that the pedicle will need more careful attention. Should the pedicle be short, we can add to its length by incising the proper coat of the tumor around its base, two or three inches beyond the stem, and shelling it off and making it part of the pedicle. I have several times removed these tumors in this way.

(4) *Interstitial Cervical Fibroids.*—These tumors occupy the vagina, but are not ejected from the cavity of the uterus, and consequently are not pedunculated, and are not capable of being treated in the same way as uterine polypi. They are surrounded by the tissue of the cervix, and are imbedded within it. When small, resembling a bullet submerged in the cervical structure, a simple incision carried through the tumor, so as to bisect it, will often be sufficient to lead to its decay and destruction. To make its disorganization more certain, the surfaces of the cut fibroid may be touched through the speculum with a pencil of vegetable caustic or of *potassa-cum-calce;* or, better, the small mass may be entirely enucleated by the point of the finger after opening its capsule. When the tumor is large, swelling out a portion of the cervix to the size of a walnut or an orange, it will be necessary to make a free slit in its envelope and enucleate the mass at once. These tumors are so accessible to the finger that this procedure can readily be accomplished, provided their capsule has never undergone inflammation. In all of these cases the vagina should afterwards be kept carefully cleansed by antiseptic washes, and the inflammation of the cervical mucous membrane, which usually accompanies these tumors, should receive proper treatment.

(5) *Myomatous Degeneration of the Uterus.*—The uterus sometimes seems to be overwhelmed with fibroids filling up the interstices everywhere, and even to harbor at the same time every variety of tumor heretofore considered. When such a condition exists, it is not to be expected that medicinal means alone will be of much use, nor can the surgical treatment of each, individual, diseased mass be contemplated, but if anything is to be done, it must be the entire extirpation of the affected organ. As these cases cannot always be clearly diagnosticated, the surgeon must be prepared to vary his original course of action during the progress of an operation. He may commence with the expectation of removing only a pedunculated fibroid, or even an ovarian tumor, but will sometimes end by extirpating the entire uterus and its appendages. I will relate the following case:—

On August 8, 1875, I visited, with Dr. Kurtz, Mrs. J. A. D., of Reading, Pa. She was 44 years old, had menstruated at 15 years of age, and had always been regular. When 27 years old she had married, and had had two children, and one miscarriage between them. In 1872 menstruation had become more free, and in the summer of 1874 she had had two or three attacks of bleeding during the menstrual intervals. In 1872 she had first noticed a tumor in the right groin. It was hard and movable, and fell over on turning her body. For two years its increase in size had been gradual, but during the last twelve months very rapid. As the tumor enlarged, her general health failed, and she rapidly emaciated.

At the time of my visit, the abdominal enlargement was equal to that of an eight-months' pregnancy. It was irregular in shape. There appeared to be two tumors, or one with a deep sulcus dividing it. The mass was hard, but slightly elastic, and upon the left side of its fundus there was a harder knob the size of a walnut. The two lobes were movable on each other. The uterus occupied the back part of the pelvis, admitted the sound two-and-a-half inches, and was not much influenced by manipulating the abdominal growth. While the sound was in the uterus, I discovered still another and much harder mass in the superior strait of the pelvis, which I diagnosticated as an intra-mural fibroid, but had some doubts in consequence of the abdominal enlargement having masked the examination. The diagnosis was obscure, but I inclined to the opinion that the abdominal tumor was pedunculated, and hence rather favored an operation.

The patient's health continuing to fail, she solicited relief. September 1, 1875, I visited Reading, and met Drs. Kurtz, Brooke, Ulrick, Dundor, Kuhn, Coblentz, Cleaver, Weidman, Brodhead, and student Ellis Kurtz. The division of the tumor had now disappeared, and the mass was more consolidated. An incision seven or eight inches long was made below the umbilicus through a very attenuated abdominal wall. On exposing the tumor, the characteristic mahogany color at once disclosed its uterine nature, and further examination developed its real character: fibroid degeneration of the body of the uterus. There being no adhesions, the whole mass was easily rolled from the cavity of the abdomen. The body of the uterus was now found to be occupied by intra-mural fibroids, while the cervix was normal. Both ovaries were seated on the lower portion of the enlarged uterus; the right one being healthy, and the left cystic, and as large as a walnut. A strong needle was now armed with a double ligature of strong plaited English silk cord, and with it the cervix uteri was transfixed just above the insertion of the vagina and below the ovaries. Each ligature was securely tied on its respective half of the cervix, and each was again made to encircle the whole cervix and firmly secured. The tumor, consisting of the uterus and both ovaries, was now cut away, leaving a large button beyond the ligature. To make it doubly safe the stump was embraced in Atlee's clamp, and maintained outside. The cervical canal was plainly seen on the face of the cut pedicle, into which a probe was passed about three-eighths of an inch, and a finger introduced into the vagina entered the os tincæ and felt the grasp of the clamp. The return circulation of the tumor, which escaped on excising it, was prevented from entering the abdominal cavity by protecting sponges. The wound was closed with iron-wire sutures. The patient made an excellent recovery, and now enjoys good health.

In considering the propriety of extirpating the uterus by abdominal section, we must judge each case by itself. The condition of the pelvis, vagina, and cervix uteri, is of primary importance. If the cellular tissue is indurated in consequence of inflammation or other cause, or the vagina shortened and rigid, or the cervix occupied by fibroid deposits, it will not be a case favorable for operation. If, however, the pelvis is free from morbid deposits, the vagina long or extensible, and the cervix in a normal state, the chances of life may be considered almost equal to those of ovariotomy.

(6) *Fibro-cystic Tumors of the Uterus.*—The fibro-cystic tumors of the uterus, as far as my observations go, are developed upon the exterior surface of the organ, and are usually pedunculated. They are constituted of fibrous tissue, and are more or less cancellated in structure, and in consequence of their greater impressibility are called soft fibroids in contradistinction to the hard tumors heretofore considered. They grow sometimes to an enormous size. These tumors, in my opinion, are entirely beyond the influence of ergot, while they seem at times to be controlled in their growth by muriate of ammonia. I have had no experience in the treatment of uterine fibroids by means of galvanism, but I should suppose that this would be the kind of tumor most amenable to such an agent. There are, however, surgical means, both palliative and radical, which I have employed with benefit. The palliative treatment consists in penetrating the abdominal wall with a long, large-sized trocar and canula, thrust into the centre of the tumor, withdrawing the trocar and passing a strong sound through the canula, and with it breaking up the interior, cancellated structure in every direction, and drawing off all the fluid possible. Usually after such a proceeding the tumor will diminish in size to a considerable extent. The operation, at proper intervals, may be repeated. As this treatment is original with myself, I must ask permission to illustrate it with a case:—

On April 22, 1863, I was consulted by Mrs. A. E. S., of Washington City, D. C. She was 42 years old, had commenced menstruating at 14 years of age, and had been married at the age of 17. She had had three children, the youngest then 18 years old. About four weeks before seeing me, she had been seized with very acute pain in the right groin, which lasted for twenty hours, and was only relieved by strong opiates. This was followed by an enlargement of the right side. She was a fine, healthy-looking lady, disposed to corpulency, and exhibited no unusual abdominal prominence. An elastic, cyst-like, smooth tumor was detected occupying the hypogastric and right inguinal regions, and rising above the umbilicus. It was at that time diagnosticated to be an ovarian tumor, and she was advised to let it alone.

September 24, 1868, she consulted me again. The abdomen then was very much larger than that of a woman at the full period of pregnancy. It was smooth, elastic, compressible, semi-fluctuating, and of uniform shape. The uterus was normal in size, and movable, independently of the mass. In company with Dr. David Burpee, I passed the large trocar into the tumor below the umbilicus, but no fluid escaped. The sound was then introduced through the canula, and passed round in several directions. It was very evident that in manipulating with the sound many fragile septi were broken up, which proved to be the walls of cells containing fluid. Two or three gallons of fluid, stained with blood, were removed in this way, and it coagulated on exposure to air. The operation was followed by no unpleasant symptoms, and afforded great relief. Up to this time the case is reported in detail in my work on the Diagnosis of Ovarian Tumors, page 285. Subsequently the tumor was invaded in the same way at distant intervals three times, and each time with beneficial results—the last being in March, 1871. I saw the patient in November, 1872, when her general health was good, and her size very much diminished, although the tumor was still there. During all this time she had used the muriate of ammonia internally, and the combined treatment had had a very happy effect on her condition. Letters from her assure me that she still remains in comfortable health, that the size of the tumor is not nearly so great, and that its further development is probably arrested.

I have treated other cases of fibro-cystic tumor of the uterus in the same way with similar results, but have never entirely cured them by

these means. In one case, I cut up the interior structure with a small knife introduced through the large canula, and afterwards injected acetic acid. This was followed also by a decided diminution of the tumor, and by no unpleasant consequences.

The only radical cure for these tumors I believe to be extirpation. In their removal, the surgeon must keep in mind their peculiar pathological relations with the uterus and with the peritoneum, as these differ materially from those of ovarian tumors. As far as my observations have gone, the fibro-cystic tumor originates from the wall of the uterus at the junction of the cervix with the body, at or just below the point where the peritoneum is reflected from the uterus to form the recto-vaginal *cul-de-sac*. As the tumor enlarges it raises the pelvic peritoneum above it, and, dissecting it from its natural attachments, elevates it into the abdominal cavity far above the pelvis, so that a real peritoneal *cul-de-sac* almost surrounds the enlarged tumor between the umbilicus and pubes. The tumor now is covered by a peritoneal coat above, while its pelvic portion is free from peritoneum. The reflected peritoneum, therefore, acts like a coronary ligament in binding the lower portion of the tumor in the pelvis. To illustrate the operation, I will relate the case of Miss E. E., aged 57 years. The same case is detailed for another purpose in the work referred to above, page 279, but the manner of operating is omitted:—

On June 5, 1868, in the presence of Drs. Mitchell, Brinton, Thompson, and Keen, and assisted by Drs. Drysdale and Burpee, an incision seven inches in length was made through the linea alba down to the tumor. Passing my hand through the incision, I found the tumor to be adherent to the abdominal wall; but these adhesions were readily broken up. I now particularly explored the interior of the left side, in the previously ascertained locality of the elevated uterus, but soon encountered an additional tumor, resembling an hypertrophied spleen and filling up the whole left side from the hypochondrium down into the iliac fossa. In carrying on the investigation downwards, over the large tumor, my hand was interrupted in its descent by a *cul-de-sac* of reflected peritoneum, extending around the tumor midway between the umbilicus and pubes, and firmly fixing it in position. It was, therefore, plain that the fundus of the tumor was covered by a coat of peritoneum which had been lifted from the pelvis by its development upwards. The membrane was vascular and thickened. I next cut boldly into the tumor, in the line and to the extent of the external incision, and, passing my hand into the gap thus made, broke up the whole interior of the mass, freeing it of one or two gallons of yellowish fluid, which coagulated on exposure to air. After thus reducing the size of the tumor, I succeeded in shelling off the whole peritoneal coat, to which were attached several folds of intestines, and by this means relieved it of all points of attachment in the abdominal cavity. The entire mass was now readily dislocated and turned out of its bed. It was found to be attached by a fibrous pedicle, an inch to an inch and a half thick, to the uterus on the right side, at a point between the insertion of the vagina and that of the uterine peritoneum. The pedicle was short, almost sessile. It was transfixed by a strong double ligature, which was tied both ways and also encircled the whole pedicle. The tumor was then excised, so as to allow a large button beyond the ligature.

The remaining tumor now presented itself at the opening. It sprang from the posterior surface of the left broad ligament just where it joins the posterior part of the uterus. The Fallopian tube coursed along in front of the pedicle, was wrapped around it, and its fimbriated extremity rose up on the tumor, and was attached to it. Several adhesions to the walls of the abdomen were broken up, and the tumor was turned out. The pedicle was very short, but was clamped, the Fallopian tube being included, and the tumor was removed.

The abdomen was afterwards carefully cleansed with soft sponges, as well as the pelvis, which was nothing but a raw surface having no peritoneal lining. The right ovary was found to be healthy, the left being absent and evidently involved in the small tumor. A large amount of loose peritoneum, which had been removed from the large tumor, now occupied the lower portion of the abdominal cavity. It had contracted very much, and appeared more thickened. It was allowed to arrange itself. The uterus was enlarged to more than twice ts normal size. On its anterior wall was a small sessile subperitoneal fibroid. I opened its capsule, enucleated, and removed it.

The clamp was arranged across the middle of the wound, the ligated pedicle in the lower end, and five wire sutures were introduced above and five below the clamp; the fundus uteri occupying a position against the interior surface of the wound between both pedicles. Several ounces of blood were lost, but not sufficient to affect the pulse. One vessel was controlled by torsion, and one by silk ligature, cut short and dropped in. The large tumor was fibro-cystic, weighing thirty-five pounds. The small one was an ovarian fibroid, and weighed over five pounds. The patient made an excellent and rapid recovery, and is now in the enjoyment of perfect health.

In presenting this subject for discussion, I am aware that I am open to criticism for having made such an arbitrary subdivision of fibroid tumors of the uterus. It is, however, apparent that this has been done for practical reasons. A much simpler classification would have been into subserous and submucous, or *extra-muscular*, and interstitial or *intra-muscular*. But as the question to be considered was the *treatment* of fibroids, I preferred arranging these tumors as we find them in patients, so as to make the paper purely clinical and practical. In making the above division, it must not be inferred that each case can be classified under one or other head, for several or even all forms of fibroids may be present at the same time. According to my observation, however, the intra-muscular tumor is most likely to be solitary, while the extra-muscular is more frequently multiple.

As a consequence of the limited time allotted to this paper, and which has already been exceeded, I have viewed this subject only from a personal stand-point. In omitting to mention the various modes of treatment of which I have no experience, I mean no disrespect or disparagement to any of my medical brethren, who, perhaps, may have had better success than myself. These methods, it is hoped, will be stated by their advocates. With regard to the use of one agent, which has recently been extensively used, I may be excused for repeating that I commenced the use of ergot in 1845 in the treatment of fibroid tumors, and have continued to employ it beneficially ever since. I have, also, for many years, used muriate of ammonia alone, and in connection with ergot, and with such results as have satisfied me of its value. The dose is ten grains three times a day. A solution of one drachm to one pint of water is used twice a day as a wash to the abdomen and to the vagina, and an apron of silk oil-cloth is worn next to the skin. Neither patient nor physician should tire in its use, using it for months and even years, if the tumor does not disappear. I am satisfied that it often arrests the growth; so does ergot. It sometimes causes its entire disappearance; I have yet to see this result from ergot alone, except in mechanically expelling polypi. It sometimes fails to produce any appreciable results; so does ergot. I attribute the influence of muriate of ammonia to its alterative, resolvent, and sorbefacient power, as well as to its alkaline properties. I am well aware that the remedial power of muriate of ammonia has been

denied on the ground that inflammatory or plastic deposits have been mistaken for fibroids. I do not pretend to possess any more diagnostic tact than others, but the same remark will apply to all other remedies and to all other persons. Even if it accomplishes so much under an error of diagnosis, it certainly is a great boon to suffering humanity.

I now present the following propositions, which will throw the whole subject of treatment open to discussion:—

I. Fibroid tumors of the uterus, although frequently unaffected by treatment, are sometimes cured, and often controlled in their growth, by medicinal and other agents.

II. Fibroid tumors of the uterus which are entirely harmless to the patient, should never receive surgical treatment involving the least danger.

III. Extra-muscular, submucous tumors usually demand surgical treatment.

IV. Hemorrhage, caused by a fibroid, uncontrollable by other means, may be, and should be, arrested by the knife.

V. In the surgical removal of fibroids, it is of the greatest importance to extirpate the living tumor.

VI. When the living tumor cannot be removed, as is usually the case when the capsule has undergone inflammation, antiseptics must be diligently employed.

VII. Extra-muscular tumors of the subperitoneal variety, when involving health and life, should be removed by abdominal section.

VIII. In cases of recurrent fibroids, it is justifiable, under certain circumstances, to amputate the inverted uterus, or to remove the organ by abdominal section.

IX. In exceptional cases of uterine fibroids, extirpation of the uterus by abdominal section is warranted.

X. As a general rule, in all cases of fibroids which destroy the comfort of a patient, or hazard life, and are not amenable to other treatment, surgical interference is to be commended.